THURSDAY, JULY 27, 1871

MR. CROOKES ON THE "PSYCHIC" FORCE

WITH a boldness and honesty which deserve the greatest respect, Mr. Crookes has come forward as an investigator of those mysterious phenomena which have now been so long before the public that it is unnecessary to name them, more especially as their generally received name is very objectionable.

Two things have contributed to retard our knowledge of these strange events. In the first place, until lately few men of name have been associated with their occurrence, so that outsiders have not had the facts put before them in a proper manner. In the next place, we are inclined to endorse the remark of Mr. Crookes, that men of science have shown too great a disinclination to investigate the existence and nature of these alleged facts, even when their occurrence had been asserted by competent and credible witnesses.

Before adverting to the results obtained by Mr. Crookes, a few words may be said about our mode of procedure in accepting testimony.

Let us suppose that a man comes before us as a witness of some strange and unprecedented occurrence. Here it is evident that we are not entitled to reject his testimony on the ground that we cannot explain what he has seen in accordance with our preconceived views of the universe, even although these views are the result of a long experience; for by this means we should never arrive at anything new. Our first question is manifestly one regarding the man's moral character. Is he an honest and trustworthy man, or is he trying to deceive us?

Let us assume that we have convinced ourselves of his honesty; we are then bound to believe that *he thought he saw* what he described to us; not necessarily, however, that the occurrence which he described actually took place. Convinced, already, that he is not deceiving us, we next question whether he may not be deceived himself. Let us, however, assume that, upon investigation, the circumstances are such that collusion of any kind is out of the question, and that the man is neither trying to deceive us, nor that it is possible that he himself can have been deceived by others. Even yet we have an alternative in our judgment of the event. The phenomenon may be *subjective* rather than *objective*, the result of an action upon the man's brain rather than an outstanding reality. For nothing is more certain than the occasional occurrence of such strange impressions; and the cat or the dog or the skeleton by which the patient is haunted is frequently recognised even by himself as having no external existence. Of late years we have been able to produce instances of this depraved consciousness almost at will. The author of these remarks considers it certain that the electro-biologist has frequently caused them. The unimpeachable character of the patient, combined with the fact that he has sometimes pronounced water to be wine, or a snow storm to be taking place in a room, can only be accounted for on the supposition that he has been put into a peculiar state, during which his evidence of events is utterly worthless. But beyond the bare fact, we know next to nothing of the laws that regulate this action, nor can we tell under what conditions one man is capable of influencing another, or whether a man or body of men may not be capable of influencing themselves.

To come now to the class of events which Mr. Crookes has witnessed. It is greatly to his credit that he has come forward so frankly and honestly; and since he has begun to investigate the peculiar class of facts, we are sure that he will consider it his duty to continue the investigation in such a way as to convince those men of science who may not themselves be able to take up the question—outsiders in fact. Mr. Crookes will, we are sure, not object to a few critical remarks honestly made with the sole view of finding out the truth, and we would therefore express a wish that, in order to facilitate operations the experiments should in future be conducted by only by such men as Mr. Crookes himself, and that it should always be absolutely superfluous to investigate whether machinery, apparatus, or contrivance of any sort, be secreted about the persons present. We should thus start from a higher platform, and the investigation would gain in simplicity, although perhaps something might be lost in the marked nature of the results obtained.

Allowing, however (as we are disposed to allow), that things of an extraordinary nature are frequently witnessed on such occasions, yet we are by no means sure that these constitute external realities. The very fact that the results are uncertain, and that, as far as we know, they have never yet been obtained in broad daylight before a large unbiassed audience, would lead us to suspect that they may be subjective rather than objective, occurring in the imaginations of those present rather than in the outward physical world. Nor can this doubt be removed by any precision of apparatus; for what avails the most perfect instrument as long as we suspect the operator to be under a mental influence of the nature, it may be, of that which is witnessed in electro-biological experiments? The problem is, in fact, one of extreme difficulty, and we do not see how it admits of proof, provided the influence cannot be exerted in broad daylight and before a large audience. There is, however, a cognate phenomenon which admits of easy proof. We allude to clairvoyance, and have in our mind at the present moment a man of science who if not himself a clairvoyant has yet the power to command the services of one who is. Now, were he at once to communicate to a journal such as NATURE, in cipher if necessary, the knowledge derived through the influence, giving the proof afterwards when obtained in an ordinary manner, the public would soon be in a position to judge whether there is any truth in the influence or not.

It is, in fact, somewhat hard upon the writer of these remarks and some others who are disposed to allow the possibility of something of this nature, but have not the opportunity of investigating it, that those who have will not satisfy the public with a convincing proof.

B. STEWART

TYNDALL'S FRAGMENTS OF SCIENCE

Fragments of Science for Unscientific People. By Prof. Tyndall, LL.D., F.R.S. (London: Longmans: 1871.)

THIS volume is a reprint of a number of detached essays, lectures, and reviews, by Prof. Tyndall, published at various times and in various places during the last ten years. Besides a few shorter pieces collected at

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the end, there are in all thirteen articles. These consist of two classes of a totally distinct nature. The larger number constitute considerably the greater bulk of the volume, deal entirely with scientific subjects, and are of a special scientific nature. The remainder deal either directly or indirectly with the question of the opposition or concordance of science and religion. To this question, Prof. Tyndall brings that same remarkable clearness and definiteness of statement which characterises his writings on purely scientific subjects. It is a highly desirable thing for all parties that it should be distinctly stated what are the issues, in their ultimate form, to which our various hypotheses may lead. Prof. Tyndall, from the scientific side, makes this statement clearly and distinctly. He views an hypothesis, so to speak, in its widest generalisation, and does not shrink from it or its consequences. If, he would say, you hold these or those views, then this is what they *must* imply, and what, if these views be true, you *must* come to; and so you need not be afraid, and if you hide it from yourself you only cloak the truth in the one case, or hinder the exposure of error in the other. As an example, let us take the statement of the Natural Evolution hypothesis in the lecture on "The Scientific Use of the Imagination" (page 163 of the present volume). Speaking of the evolution of the present world from a nebulous mass he says:—

> "For what are the core and essence of this hypothesis? Strip it naked, and you stand face to face with the notion that not alone the more ignoble forms of animalcular or animal life, not alone the nobler forms of the horse and lion, not alone the exquisite and wonderful mechanism of the human body, but the human mind itself—emotion, intellect, will, and all their phenomena—were once latent in a fiery cloud. But the hypothesis will probably go even further than this. Many who held it would probably assent to the position that at the present moment all our philosophy, all our poetry, all our science, all our art—Plato, Shakspeare, Newton, Raphael—are potential in the fires of the sun. We long to learn something of our origin. If the Evolution hypothesis be correct, even this unsatisfied yearning must have come to us across the ages which separate the unconscious primeval mist from the consciousness of to-day. I do not think that any holder of the Evolution hypothesis would say that I overstate it or overstrain it in any way. I merely strip it of all vagueness, and bring before you, unclothed and unvarnished, the notions by which it must stand or fall."

"Fear not the Evolution hypothesis," he says further on, "steady yourselves in its presence in the ultimate triumph of that truth which was expressed by old Gamaliel when he said, 'If it be of God ye cannot overthrow it; if it be of man it will come to nought.'" This is the true scientific spirit; and the beautiful daring with which Prof. Tyndall launches upon an unknown sea trusting to this guiding principle, is an instance of that noble faith which has lived through all phases of the human mind alike in scientific and unscientific ages. To have a faith in something seems to be the ultimate necessity of all humanity. Let all of us beware how we call that faith, as it exists variously in each of us, false.

Prof. Tyndall always writes in a beautiful, clear, and pointed style. Not the least excellent part of it, and that which probably as much as anything else constitutes him the great scientific teacher he is, is his unbounded power of apt illustration. He carries this into every subject with which he deals. As an example, take the following from page 58 of the article on "Miracles and Special Providences:"—

> "The mind is, as it were, a photographic plate, which is gradually cleansed by the effort to think rightly, and which when so cleansed, and not before, receives impressions from the light of truth."

Again, at page 101 we find the following:

> "We live upon a ball of matter 8,000 miles in diameter, swathed by an atmosphere of unknown height. This ball has been molten by heat, chilled to a solid, and sculptured by water."

There is the touch of a master's hand in the way in which these few words "fling us the picture of the fight," and enable us vividly to realise that which they would have us realise.

Prof. Tyndall, however, has evidently given less attention to spiritual than to natural questions. Indeed, it is not to be wondered at that a man now-a-days should not have time to pay attention to everything. It is sometimes, however, to be lamented, though perhaps hardly to be wondered at, that a man should write about too much. The articles of a purely scientific character consist of two on "Radiative and Radiant Heat," one on "The Light of the Sky," and one on "Dust and Disease."

The articles on the "Life and Letters of Faraday" will well repay the perusal of those who have not already read them in the *Academy*, and will even well merit a re-perusal, as everything does which gives us any insight into the character of that great and child-like man.

The last of the series is a lecture on Magnetism, addressed to the teachers of primary schools, at the South Kensington Museum. Prof. Tyndall tells us, in a short introduction to it, that he had at first some doubts as to the propriety of its insertion. "But, on reading it," he says, "it seemed so likely to be helpful that my scruples disappeared." We are exceedingly glad that it has been so. The lecture is a beautiful example of true teaching, and of that excellent union of logic and experiment which is the true education which physical science is so well calculated to supply.

JAMES STUART

DALL'S BRACHIOPODA OF THE UNITED STATES COAST SURVEY

Report on the Brachiopoda obtained by the United States Coast Survey Expedition, in charge of L. F. de Pourtales, with a Revision of the Craniidæ and Discinidæ. By W. H. Dall. (Bulletin of the Museum of Comparative Zoology, at Harvard College, Cambridge, Mass.) With two plates. (Cambridge, U.S., 1871, 8vo.)

THIS is another important instalment of the published results of the deep-water dredgings made by our Transatlantic cousins and friends in the Gulf of Mexico. The first was issued in 1869, and consisted of a Preliminary Report on the Echini and Starfishes, by Prof. Alexander Agassiz. A report by Dr. Stimpson on the Crustacea procured in the same expedition is announced as nearly ready; and that distinguished zoologist has also undertaken the still greater charge of a report on the Mollusca. It is impossible to over-rate the impulse which will be every where given by such explorations to the study of marine Natural History.

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